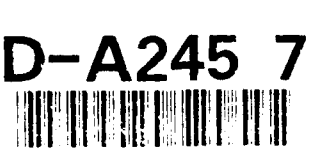

CBCS 92-1

Background Data Measures for Predicting Security Risks: A Construct Approach

Final Report
Contract No. N00014-90-J-4125

January 1992

by

Michael D. Mumford, Theodore L. Gessner,
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Submitted to:

U.S. Office of Naval Research
Personnel Security Research Group
Monterey, CA 93940-2481

Submitted by:

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Executive Summary

Military and federal organizations are necessarily concerned with protecting secure information. A variety of procedures have been used to identify people who might breach security. It has proven difficult, however, to formulate effective predictors of these acts applicable to different samples and positions. The intent of the present study was, therefore, to (a) identify a set of constructs influencing the propensity for destructive acts, such as security breaches, and (b) generate valid life history measures for assessing status on these constructs.

Initially, we argued that security breaches represent a motivated, highly destructive form of interpersonal behavior. This observation led to the conclusion that differential characteristics influencing the propensity for destructive acts are also likely to influence security breaches. Subsequently, the literature bearing on the nature of destructive acts was reviewed. This review led to the identification of five beliefs, four motives, and four self-system constructs that appeared to influence the propensity for destructive acts.

The procedures suggested by Mumford and Owens (1987) were used to generate background data items capable of measuring each of these constructs. These items, along with a series of reference measures, were then administered to a sample of 246 undergraduates attending a large southeastern university. Subsequent analyses indicated that reliable, or accurate, measures of these constructs could be formulated using background data items. Furthermore, it was found that these scales yielded an interpretable pattern of relationships with the reference measures, thereby providing some initial evidence for their construct validity.

Having obtained evidence for the reliability and validity of these scales, we sought evidence for their ability to predict aspects of destructive behavior commonly observed in college samples. Thus, measures of greed, dishonesty, and lack of commitment to others were constructed and administered to sample members. A structural modeling procedure was used to assess the ability of these constructs to account for each form of destructive behavior. It was found that these models yielded multiple Rs of .74,

.65, and .58 for predicting greed, dishonesty, and a lack of communality, respectively. In a supplemental study, it was found that these constructs would also predict performance in a sample of U.S. Department of Defense managers.

This work indicates that construct-based background data measures are effective predictors of different kinds of destructive acts and can be applied in different samples. Thus, there is reason to suspect that these scales might predict other forms of destructive acts, such as security breaches, bribe-taking, and sabotage. These measures and the associated constructs might, therefore, prove useful in screening applicants who lack extensive financial histories, generating new alternative measures for use in security screening, and controlling other forms of destructive acts of concern to government organizations.

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Introduction

Like many organizations, the U.S. Office of Naval Research is confronted with an important, albeit complex, problem: How can we control motivated breaches of responsibility? Intentional breaches of responsibility, such as failure to protect secure information, sabotage, and selling information, represent self-centered, destructive social acts that can have a marked impact on organizational performance. Although situational variables, such as opportunity and perceived payoffs, contribute to breaches of responsibility (Forsyth & Nye, 1990; Hartshorne & May, 1928; Rapoport & Eshed-Levy, 1989; Walters, 1990), only a few individuals presented with these opportunities forego their responsibilities in the pursuit of personal gain (Oyserman & Markus, 1990a, 1990b; Walters, 1990).

This observation brings to fore still another question: How are we to identify people whose characteristics predispose them to these irresponsible acts? If the constructs contributing to this propensity can be identified, and alternative measures of these constructs formulated, this information might be used to address a variety of issues pertinent to the maintenance of organizational security. These measures might, for instance, be used to screen individuals applying for sensitive positions or, alternatively, mark them for special supervision. These measures might also be used to extend current interview procedures or provide a more extensive appraisal of high-risk cases that takes into account the varied manifestations of irresponsibility (e.g., security breaches, sabotage, and theft). Finally, they might prove useful in screening individuals who lack extensive career or financial histories or whose breaches of responsibility are motivated by noneconomic concerns.

Construct Definition

Destructive Acts

In any breach of security, or responsibility, the perpetrator has broken an implicit or explicit social contract under conditions where this breach might result in harm to others. This observation suggests that security breaches can be understood as an intentional destructive act. Socially destructive

acts involving intentional harm to the well-being of others have been described as a form of "evil" (Becker, 1973, 1975; Fromm, 1973; Madig, 1988; Staub, 1985, 1989a, 1989b; White, 1990). The term "evil" carries evaluative, metaphysical connotations (Doob, 1978; Morrow, 1991). Nonetheless, acts where the paths to goal attainment result in harm to others, or social organizations, represent a behavioral phenomenon subject to legitimate scientific inquiry (Hogan, 1973; Kurtines, Alvarez, & Azmitia, 1990; Mumford, Gessner, O'Connor, Connelly, & Clifton, 1991).

The available evidence indicates that situational variables exert a strong influence on the occurrence of destructive acts (Staub, 1985, 1989a, 1989b). In his classic work on authority and obedience, Milgram (1974) found that 65% of his subjects would follow a researcher's instructions to shock a confederate who was in obvious pain. Other work indicates that a variety of situational variables, including anonymity (Diener, Dineen, Endresen, Beaman, & Fraser, 1975); psychological distance (Miller & Eisenberg, 1988); competitive pressure (Hegarty & Simms, 1978); and perceived contingencies (Trevino & Youngblood, 1990) contribute to the occurrence of these acts.

Although situational forces exert a strong influence on destructive acts, it is also true that some people are unwilling to harm others, even when confronted with strong situational pressures. Relatively little situational pressure, however, is required to induce other people to harm those around them. Blass (1991) stresses this point in his discussion of the Milgram (1974) studies. Thus, certain characteristics of individuals might influence whether they construct situations where others might be harmed and, subsequently, select strategies for dealing with this situation likely to result in damage to the well-being of others. This observation, of course, suggests that an interactional model, taking into account both differential and situational characteristics, might prove useful in elucidating the nature of these acts (Kenrick & Funder, 1988; Staub, 1989a; Thomas & Chess, 1981).

This interactional approach brings to fore an important question vis-à-vis our concern with differential characteristics: How do differential characteristics shape the nature and occurrence of self-serving destructive acts, such as security breaches? One potential answer to this question may be found

in the notion of intent (Berofsky, 1989; Mumford, Gessner, O'Connor, Connelly, & Clifton, 1991). People enter situations to attain certain goals and select courses of action they believe will bring about goal attainment (House & Mitchell, 1968). Situations, of course, condition operative goals and feasible paths to goal attainment. However, many situations present multiple goals and provide alternative paths to goal attainment. When individuals consistently select situations, goals, and paths to goal attainment that result in harm to others, under conditions where options exist, it seems plausible to argue that enduring characteristics of the individual play a role in shaping destructive acts (Alford, 1990; Madig, 1988; White, 1990). It might be argued, furthermore, that those differential characteristics that make destructive goals or destructive paths to goal attainment particularly attractive to certain individuals may provide viable explanatory constructs in attempts to understand the origin of these acts (Mumford, Gessner, O'Connor, Connelly, & Clifton, 1991; Staub, 1989a; Trevino & Youngblood, 1990).

Beliefs

Intentional acts involve knowledge or understanding of the situation (Mumford & Connelly, 1991). In ambiguous social situations, the individual's interpretation of information and the beliefs they use to structure this information exert a profound effect on their preferred courses of action (Wright & Mischel, 1988; Mumford, Reiter-Palmon, & Redmond, in press). In a recent review of studies using the Milgram paradigm, Blass (1991) examined the relationship between locus of control beliefs and obedience to an experimenter's request to shock a confederate. It was found that external control beliefs contributed to people's willingness to harm others. Along similar lines, Trevino and Youngblood (1990) found that participants in a managerial role-playing exercise were more willing to take unethical actions that harmed customers or the organization if they displayed an external locus of control. Greater susceptibility to environmental pressure might account for the tendency of externally oriented individuals to be more willing to harm others (Blass, 1991). External control beliefs, however, might also provide a convenient justification for destructive acts (Giacalone & Pollard, 1990) or lead to poor self-regulation (Walters, 1990).

Regardless of the interpretation applied, these studies indicate that external control beliefs can influence the propensity for destructive acts. Locus of control beliefs, however, are not the only kind of belief structure that might influence the occurrence of these acts. For instance, if one believes other people are dangerous, destructive entities, negative beliefs about humanity might serve not only to justify destructive acts, they might also encourage these acts based on the logic, *get them before they get you!* In fact, Dillehay's (1978), Heath and Martin's (1990), and Hindelang's (1971) observations indicate that negative beliefs about humanity are related to both delinquency and willingness to harm others in prisoners' dilemma games. Certain kinds of outcome beliefs also may contribute to the propensity for destructive acts. Martin, Scully, and Levitt (1990) and Meadows (1987) have shown that beliefs about the occurrence of unfair, negative outcomes contribute to the propensity for destructive acts. The findings of Bartol and Martin (1990) and Hegarty and Simms (1978) indicate, furthermore, that uncertainty about the likelihood of goal attainment can also influence the occurrence of these acts.

Beyond control, humanity, and outcome beliefs, there is another belief structure that might influence the propensity for destructive acts. Fromm (1973) has argued that people are more likely to harm others if they believe people can be used as tools or objects for the attainment of personal goals. The work of Hare and his colleagues (Hare, 1980, 1982, 1985; Hare & McPherson, 1984; Schroeder, Schroeder, & Hare, 1983) indicates that psychopaths often view others as objects, and that psychopathy contributes to criminal acts. Indirect evidence pertaining to the significance of object beliefs has also been provided by Eisenberg and Miller (1987) and Hunter, Gerbing, and Boster (1982), who found that lack of empathy and the belief that others could be manipulated contributes to various forms of destructive interpersonal behavior.

Motives

The available evidence suggests that beliefs exert direct effects on the occurrence of destructive acts. These beliefs, however, do not arise in a vacuum. Thus, other kinds of constructs, particularly

motives, might influence the expression of these beliefs. Motives, moreover, might exert direct effects on these acts by conditioning the attractiveness of goals and destructive paths to goal attainment.

Two motivational constructs worthy of note in this regard are power and anxiety. Winter (1987a), for instance, content-coded the inaugural addresses of 34 presidents to assess power motives. He found that presidential power motives were related to their tendency to lead the country into war. On a more mundane level, Bennett (1988) and Mason and Blankenship (1987) found that power motives lead to destructive interpersonal behaviors. Along similar lines, McCrae and Costa (1990) and Yamagishi and Sato (1986) found that trait anxiety, or fear, is related to aggression and failure to allocate endowments to the common good in a decision-making game.

Fromm's (1973) observations underscore the importance of another, perhaps more subtle, set of motivational influences. He argues that the motivated defense of a weak or fragile self-system associated with narcissism (Emmons, 1987, 1989; Kohut, 1971) leads people to see others as objects, thereby contributing to the propensity for destructive acts. In accordance with this hypothesis, Emmons (1981, 1987, 1989) found that socially destructive, exploitive tendencies represent a stable component of narcissism as measured by the Narcissistic Personality Inventory (NPI). Other work by Koppelman and Mullins (1991) and La Vopa (1981) using the NPI indicates that narcissism also contributes to negative beliefs about humanity and negative beliefs about outcomes. These findings, however, are complicated by the relationship between narcissism and defensive self-enhancement. In a recent correlational study, Raskin, Novacek, and Hogan (1991) found that defensive self-enhancement was positively related to narcissism, but made an independent contribution to prediction of global self-esteem. As a result, defensive self-enhancement, or self-aggrandizement, may represent a distinct construct which, along with narcissism, contributes to the propensity for destructive acts. Some support for this proposition may be found in Gacono (1990) and Teevan (1975), who note that self-aggrandizement is related to criminality.

Self-Constructs

Our observations concerning narcissism and self-aggrandizement point to a third set of constructs that might influence the propensity for destructive acts: aspects of the self-system. Becker (1973, 1975) argued that self-esteem (apart from self-aggrandizement) and self-control, or self-regulation, block or inhibit natural destructive tendencies. Some support for this proposition has been provided by Falbo and Shepperd (1986). They found that people with low self-esteem tended to use strong (e.g., getting angry or pushing) as opposed to weak (e.g., dropping hints or acting hurt) power strategies. Other work by Pulkkinen (1982); Tangney, Wagner, Fletcher, and Gramzow (in press); and Trevino and Youngblood (1990) indicates that self-regulatory mechanisms, such as guilt, moral standards, and controlled inhibition of impulses, are negatively related to destructive acts, including drug use, delinquency, and unethical management practices.

Along similar lines, it might be argued that when others constitute a significant aspect of the self-system, people are less willing to harm others. This observation led Hogan (1973) to argue that social alienation can influence destructiveness. Studies by Akers (1985), Bock (1972), and Hirschi (1969) indicated that alienation is, in fact, related to delinquency and willingness to shock confederates in some apparent pain. More broadly, Howard (1991), Ochberg (1988), and Sarbin (1986) note that people recall and understand their lives as unfolding stories which serve to guide actions in ambiguous situations. Thus, stories, life themes, or myths with a strong commitment to others may inhibit destructive acts (Adler, 1928; Vitz, 1990) just as destructive stories or life themes may contribute to the occurrence of these acts. Oyserman and Markus (1990a, 1990b) have obtained evidence that supports this notion. In a study of 238 adolescents they found that delinquents differed from nondelinquents with respect to their "hoped for", and particularly their "feared", future selves.

Model and Objectives

Our review of the literature led to the identification of five beliefs, four motives, and four self-system constructs that appear to contribute to the propensity for destructive acts. Although beliefs are

held to have a strong direct effect on these acts, these beliefs arise from more basic motives and self-images which themselves may exert some direct effects on the occurrence of these acts. These observations, in conjunction with the potential impact of situational variables in conditioning expression of these beliefs, motives, and self-system constructs, led to the general structural model presented in Figure 1.

One implication of this model is that one cannot account for destructive acts using a single measure. Instead, measures need to be formulated for a number of different constructs, and the joint impact of these constructs on destructive acts needs to be assessed using systematic multivariate modeling procedures. Furthermore, as a syndrome of causal constructs, these measures should predict different forms of destructive acts likely to occur in different situations.

Our intent in the present study was, therefore, five-fold: (1) to develop measures of each of these belief, motivational, and self-system constructs; (2) to accrue evidence for the reliability and validity of the resulting construct measures; (3) to generate and test a model describing the relationships among these belief, motivational, and self-system constructs; (4) to show that this model and the resulting constructs could be used to predict various destructive acts of interest to the U.S. Department of Defense, such as greed or dishonesty; and (5) to show that these constructs could be applied to predict performance in the Department of Defense setting.

Construct Measures

Measurement Strategy

The belief, motivation, and self-system constructs held to influence destructive acts might be measured in a number of ways (Wink & Gough, 1990). In the present study, however, background data items were used to generate measures of the relevant constructs. Background data items present people with questions about their typical behavior and experiences in situations likely to have occurred earlier in their lives (Mumford & Owens, 1982, 1987). Thus, items might ask, *How many times a month did*

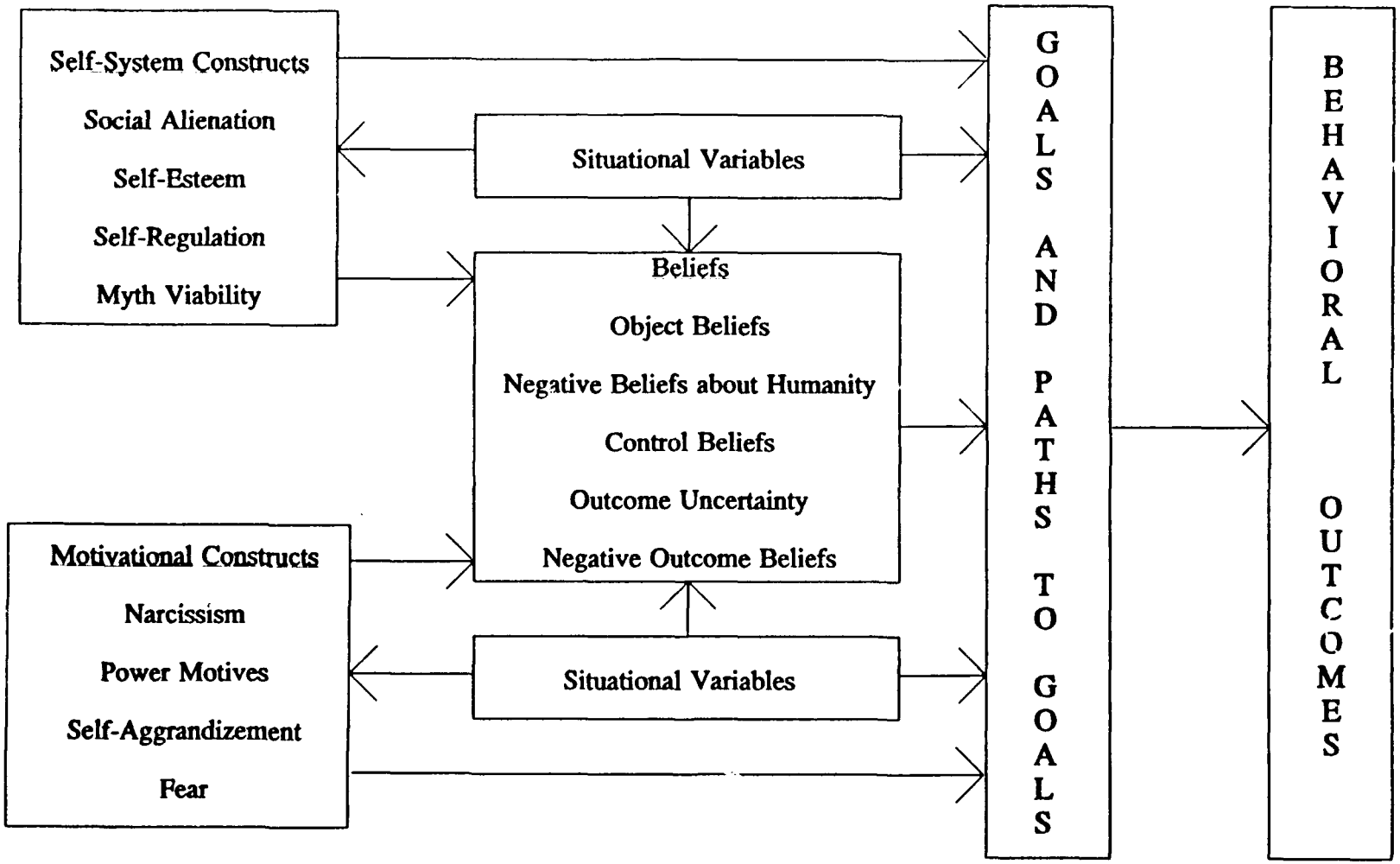

FIGURE 1. MODEL OF RELATIONSHIPS AMONG BELIEFS, MOTIVATIONAL, AND SELF-SYSTEM CONSTRUCTS CONDITIONING MALIGNANT, DESTRUCTIVE ACTS

you go out on dates in high school?, How often were you the one who had to inform your boss about problems in your work group?, or *How often were you asked to show new employees around at work?.* In responding to these questions, people are asked to recall their past behavior and experiences, and then select the response option(s) that best describes their typical behavior and experiences in the referent situation.

Use of these items in generating scales for measuring the belief, motivation, and self-system constructs was based on five considerations. First, because background data items explicitly seek to assess prior behavior and experiences in situations to which people have been exposed earlier in their lives, this assessment format appeared consistent with the model at hand (Mumford & Owens, 1987; Mumford & Stokes, in press). Second, when responses to these questions are cast in a multiple-choice format, they permit investigators to obtain a great deal of descriptive information at a relatively low cost (Owens, 1976). Third, responses to these questions have been shown to yield unusually high retest coefficients (Mumford & Owens, 1987; Owens, 1976). Fourth, item responses are not strongly influenced by social desirability and acquiescence while yielding self-descriptions that are consistent with the evaluations of external observers (Mumford, Stokes, & Owens, 1990; Shaffer, Saunders, & Owens, 1986). Fifth, and finally, there is reason to suspect that these items can be used to measure a variety of complex constructs not easily assessed using alternative assessment strategies (Kilcullen, White, Mumford, Mack, & Rigby, 1991; Mumford & Stokes, in press).

As might be expected based on these observations, reviews by Asher (1974), Ghiselli (1973), Hunter and Hunter (1984), Mumford and Owens (1987), Owens (1976), and Reilly and Chao (1982) indicate that empirically keyed background data measures are one of our best available tools for predicting complex performances. In empirical keys, items or item response options are scaled based on their ability to discriminate the members of a criterion group (e.g., high performers) from the members of some reference group (e.g., job applicants). Although this empirical keying strategy is commonly used in scaling background data items, it suffers from certain problems with respect to the goals of the present

study. To begin, empirical keying efforts require a single, well-developed criterion measure (Thayer, 1977), and it is unclear that a single, all-encompassing criterion can be generated capable of describing all forms of destructive behavior. Furthermore, empirical keys typically display limited generality and stability across subpopulations and settings (Mumford & Owens, 1987; Mumford, Stokes, & Owens, 1990; Wernimount, 1962). Finally, empirical keys typically yield measures that evidence little content and construct validity (Mumford & Owens, 1987; Mumford & Stokes, in press; Pace & Schoenfeldt, 1977; Russell & Kuhnert, in press).

These considerations led us to apply an alternative strategy for the generation and scaling of background data items intended to maximize generality and the content and construct validity of background data measures. This procedure has been described in prior research by Mumford and his colleagues (Mumford & Nickels, 1990; Mumford & Owens, 1982, 1984, 1987; Mumford, Uhlman, & Kilcullen, in press). Their approach is based on the assumption that broad constructs, such as self-esteem or reasoning, influence people's prior behavior and experiences. Therefore, items might be expressly generated to tap prior behavior and experiences reflecting expression of a given construct earlier in people's lives. These items might then be summed, using standard behaviorally-based scaling procedures, to generate construct measures capable of predicting a range of behavioral performances where this construct might play a role in shaping people's actions. In fact, recent work by Kilcullen, White, Mumford, Mack, and Rigby (1991); Mumford, O'Connor, Clifton, Connelly, and Zaccaro (in press); Mumford, Snell, and Hein (in press); Mumford, Uhlman, and Kilcullen (in press); and Uhlman, Reiter-Palmon, and Connelly (1990) has shown that the resulting scales predict multiple performances as well as, if not better than, empirical keys. More centrally, they evidence greater stability and generality along with substantial construct and content validity.

Measurement Procedures

Given these findings, this construct-based rational scaling procedure appeared to provide a virtually ideal vehicle for generating background data measures of the beliefs, motivation, and self-system

constructs held to influence the propensity for destructive acts. Accordingly, the procedures recommended by Mumford and Owens (1987) and Mumford and Stokes (in press) for generating construct-based rational scales were used to formulate measures of each belief, motivational, and self-system construct held to influence the propensity for destructive acts.

Initially, operational definitions were formulated for each belief, motivation, and self-system construct based on our review of the extant literature. These operational definitions were then presented to a panel of eight psychologists. Each panel member was asked to review the operational definition formulated for a given construct and generate 10 to 15 background data items intended to reflect prior behavior and experiences indicative of the construct during late adolescence and early young adulthood. It is of note that this age constraint in item generation was imposed to control for age grading in construct-relevant behavior and experiences (Mumford, Reiter-Palmon, & Snell, in press) and ensure the appropriateness of item content with respect to the population under consideration vis-à-vis their likely life history. Additionally, panel members were asked to frame items with respect to situations to which most individuals would have been exposed at this point in the life course to permit items to be applied in describing most people in late adolescence and young adulthood.

After items meeting these criteria had been generated, they were reviewed by panel members. Candidate items were reviewed for (1) construct relevance, (2) freedom from bias, (3) neutrality with respect to common stereotypes of socially appropriate behavior, and (4) the personal controllability of the behavior and experiences at hand. Any item judged inadequate with respect to any of these standards was eliminated. Subsequently, a consensus decision was reached concerning the best 15 to 25 items formulated for each construct. A response scoring scale was then formulated for each item by casting item response options on a five-point, ordinal continuum where escape clauses were provided wherever dictated by the nature of item content. This particular item response format was applied to maximize reliability (Mumford & Owens, 1987; Owens, Glennon, & Albright, 1962) and facilitate the application of correlational statistics (Mumford & Owens, 1987; Mumford, Stokes, & Owens, 1990).

Table 1 presents the definitions formulated for the relevant belief, motivational, and self-system constructs along with some examples of the items included in each scale. It is of note with regard to these items that they typically focus on prior behavioral expressions of a construct as opposed to more distal developmental influences. More centrally, the content of the items generated for each scale is such that it provides a plausible basis for justifying the scale's content validity in the sense that item content can be substantively justified based on the nature of the construct under consideration. Finally, given the inherently social nature of the phenomenon at hand and the complex subjective expression of beliefs, motives, and self-system constructs, it is hardly surprising that the majority of the items surviving the screening process were somewhat subjective expressions of prior behavior and experiences in social situations.

Scale Construction

The belief, motivational, and self-system items were administered to 246 undergraduates attending a large southeastern university to conduct item scaling. The 71 men and 175 women who agreed to participate in this scaling study were recruited from undergraduate psychology courses. Most sample members were middle-class whites. Their academic ability, as indexed by SAT scores, lay near the national average for college freshmen.

The relevant belief, motivation, and self-system items were administered to sample members in a two-hour group testing session, where items were administered in random order and distractor items were included to minimize stereotypic faking. Their responses were used to generate correlations between items scores and the sum of scores on all items generated for a construct. Additionally, the mean and standard deviation of item scores and total scores was obtained. In accordance with the procedures recommended by Mumford and Owens (1987) for constructing background data scales intended to measure substantive constructs, items yielding aberrant response distributions or low item-total correlations were eliminated. Internal consistency coefficients were subsequently obtained for the items

Table 1

Operational Definitions and Example Items for Background Data Scales

Scale Label	Operational Definition & Scale Description[a]
Belief Systems Variables	
1. Object Beliefs	To view other individuals as instruments to be used to achieve one's own goals; failure to recognize others as individuals; to dehumanize others. Items: *surprised by how much people invest in friendships; did not do favors for people who could not return them; told white lies to get own way; made friends with people who had good connections; has not gotten emotionally involved when dealing with people; viewed dealing with people as a game; did not feel guilty disrupting other people's lives.*
2. Negative Beliefs about Humanity	Lack of faith and trust in people; unfriendly and non-compliant toward others; feels negatively toward people. Items: *felt most people only care about themselves; disappointed by people; felt most people have not contributed much to the world; uncomfortable relying on someone else for help; second guessed the motives of others; has seldom looked for the good in others.*
3. Locus of Control Beliefs (Internal)	Attributes life events to own actions. Items: *parents rewarded or encouraged; parents allowed freedom and independence in high school; tried to achieve to limits of abilities; had strong sense of responsibility.*
4. Outcome Uncertainty	The self and/or others will not get what is desired or valued because the world is uncertain and constantly changing. Items: *often planned for things that never happened; wished things would slow down or remain the same; worried about the future; worried about admissions when applying to school; annoyed with people who claimed something was a sure thing; wished there were more guarantees in life.*
5. Negative Outcome Beliefs	Belief that negative outcomes are the only outcomes; continual feeling of threat towards self and others. Items: *life is a continuous uphill battle; often felt something bad was going to happen; felt that optimistic people were naive; did not feel that things work out for the best.*

Table 1

Operational Definitions and Example Items for Background Data Scales
(Continued)

Scale Label	Operational Definition & Scale Description[a]
<u>Self System Variables</u>	
6. Social Alienation	Estrangement or disengagement from society; to be indifferent to others and unable to empathize. <u>Items</u>: *did not hold leadership positions; did not belong to social clubs; did not have many close friends; had little contact with other people; felt others did not understand them.*
7. Self-Esteem	Feels good about himself or herself as a person; confident about own abilities and rarely behaves self-consciously or openly shows a lack of confidence. <u>Items</u>: *enjoyed talking to people did not know; participated more than others in small groups; satisfied with self in high school; had alot of friends; has effectively met the demands of social situations; classmates respected them.*
8. Self-Criticism/Regulation	Ability to monitor one's thoughts and actions; honest with regard to one's attributes. <u>Items</u>: *was hard on one's self; said the right thing at the right time; was important to identify own limitations; did not take long to fit in with an unfamiliar crowd; expressed opinions according to the situation at hand.*
9. Myth Viability	Extent to which one has a destructive image of the world and one's role in the world. <u>Items</u>: *enjoyed parties where people were really out of control; was not upset by media violence; spending time with family was not important; has not reflected on one's purpose in life as much as others.*
<u>Motivational Variables</u>	
10. Narcissism	Overvaluation of one's own attributes or achievements; extreme self-interest and selfishness; overly concerned with self satisfaction and one's own interests. <u>Items</u>: *tried to make self look good; was important to receive praise form others; spent alot of time worrying about appearance; did not talk about things not of interest to them; did not spend time with others whose opinions were different.*

Table 1

Operational Definitions and Example Items for Background Data Scales
(Continued)

Scale Label	Operational Definition & Scale Description[a]
11. Need for Power	Desire to subdue or convert others to one's own purposes by threat, promise of reward, or persuasion. Items: *frustrated when could not convince friends to adopt one's views; was important to be on the winning side; was willing to make a scene to get compliance from others; enjoyed making others do things; liked to have the last word; nominated self for positions.*
12. Self Aggrandizement	Importance of leaving one's mark on the world; promotion of one's self; desire for immortality. Items: *was important to build a reputation; was important to have friends look up to them; has often hoped to leave a mark on the world; was likely to exaggerate stories about self; wished for fame; often told others about self at parties.*
13. Fear	Unwillingness to engage in activities which might be considered harmful or risky; strong need to protect oneself. Items: *friends thought they worried too much; often agonized over decisions; often woke up at night for no apparent reason; was bothered by things that could go wrong when things were going well; had difficulty making decisions about the future.*

Note[a]: Only a few typical items are presented.

retained as potential measures of a given construct. To generate construct scale scores, the retained items were summed, and the mean and standard deviation of scale scores was established.

Table 2 presents the number of background data items included in the final version of the scales intended to measure the belief, motivation, and self-system constructs. This table also presents the mean and standard deviation of scale scores along with the internal consistency coefficients obtained for these scales. Perhaps the most straightforward conclusion that may be drawn from this data is that scale scores evidenced adequate dispersion around the mean scores.

More centrally, these scales yielded adequate internal consistency coefficients with a relatively small number of items. As may be seen, alpha coefficients ranged between .42 and .80 while yielding a median coefficient of .72. Although these internal consistency coefficients fall in the range deemed appropriate for research efforts, they are somewhat lower than the coefficients obtained for certain standard personality inventories. These coefficients, however, are comparable to those typically produced by well-developed background data scales (Mumford & Nickels, 1990; Mumford, Snell, & Hein, in press). The tendency of background data scales to yield somewhat lower alpha coefficients but relatively high retest coefficients can be attributed to the relative independence of background data items and their freedom from common psychometric biases, such as social desirability, that induce spurious item covariation (Mumford & Owens, 1987; Mumford, Stokes, & Owens, 1990; Owens, 1976).

If one accepts these arguments, then these internal consistency coefficients speak to some important inferential issues with regard to the background data scales and the procedures used in item generation. First, they indicate that substantively-based item generation procedures can be used to generate items that, indeed, manifest the expected pattern of relationships with other forms of behavior and experience held to tap a given construct. These internal consistency coefficients, therefore, provide some evidence for the meaningfulness and construct validity of the procedures used in constructing the background data scales (Fleishman & Mumford, 1991; Mumford, Stokes, & Owens, 1990). Second, they indicate that the items included in each scale tapped a coherent, underlying construct. This finding

Table 2

Scale Characteristics for the Beliefs, Motivational and Self System Constructs

Scale	Mean	Standard Deviation	Alpha	Number of Items
Belief System Variables				
Object Beliefs	52.42	7.35	.73	19
Beliefs about Humanity	60.39	7.96	.77	19
Locus of Control Beliefs (Internal)	33.09	4.99	.69	9
Outcome Uncertainty	47.73	6.72	.71	15
Beliefs about Outcomes	34.26	6.18	.74	12
Self System Variables				
Social Alienation	35.59	6.91	.73	14
Self-Esteem	52.88	8.19	.80	16
Self-Regulation	28.79	3.81	.42	9
Myth Viability	18.75	3.56	.43	7
Motivational System Variables				
Narcissism	34.35	4.97	.68	11
Need for Power	30.08	5.60	.68	11
Self-Aggrandizement	29.84	4.95	.65	10
Fear	30.38	5.75	.75	10

speaks to both the meaningfulness of these scales and their item markers. In this regard, however, the nature and magnitude of these coefficients is such that it appears that the belief scales were better defined than the motive and self-system scales. Hence, future research should examine the feasibility of generating additional items for marking these constructs, particularly self-regulation and myth viability. Furthermore, due to the complex expression of motives and self-system constructs in life history (Winter, 1987a, 1987b), it may prove necessary to generate a larger pool of items to obtain internal consistency coefficients for motivational and self-system constructs comparable to these obtained for beliefs.

Construct Validity

Scale Correlations

Although these internal consistency coefficients indicate that the background data scales captured true variance relevant to item content, they do not directly speak to the meaningfulness of substantive inferences derived from these scales. Some initial evidence bearing on the construct validity of these scales may be obtained by considering relationships among the beliefs, motives, and self-system scales observed in the undergraduate sample (Fleishman & Mumford, 1991; Messick, 1989). These scale correlations are presented in Table 3.

Raskin, Novacek, and Hogan (1991) found that self-aggrandizement was related to narcissism. Accordingly, the self-aggrandizement and narcissism scales developed in the present study yielded a correlation of .54. It has been argued, moreover, that narcissism represents an attempt to defend a weak or fragile self-concept (Emmons, 1987; Kohut, 1971). Thus, it was anticipated that narcissism would yield the strong positive relationships we observed with our measures of power motives (r = .42) and fear (r = .32). Other work by Akers (1985), Heath and Martin (1990), Hogan (1973), and Walters (1990) suggests, in accordance with our findings, that social alienation should be positively related to negative beliefs about humanity (r = .44) and negative beliefs about outcomes (r = .51) while being negatively related to self-esteem (r = -.59).

Table 3

Intercorrelations of Core Constructs

	Object Belief	Negative Beliefs About Humanity	Internal Locus of Control	Outcome Uncertainty	Negative Beliefs About Outcomes	Social Alienation	Self-Esteem	Self-Regulation	Myth Viability	Narcissism	Need for Power	Self-Aggrandizement	Fear	Greed	Communality	Honesty
Object Belief	1.00	.35	-.03	.41	.26	.20	.01	.01	.40	.34	.45	.43	.04	.48	-.32	-.57
Negative Beliefs About Humanity		1.00	-.02	.59	.62	.44	-.09	.16	.17	.24	.46	.31	.39	.36	-.13	-.10
Internal Locus of Control			1.00	.06	-.08	-.24	.52	.18	-.03	.07	.01	.06	.03	-.03	.14	.10
Outcome Uncertainty				1.00	.61	.23	.00	.29	.10	.48	.53	.54	.54	.61	-.01	-.13
Negative Beliefs About Outcomes					1.00	.51	-.31	.20	.18	.29	.38	.20	.65	.42	-.06	-.08
Social Alienation						1.00	-.59	-.17	.12	.13	.09	-.05	.33	.07	-.27	-.13
Self-Esteem							1.00	.19	.04	-.04	.10	.13	-.22	.00	.26	.01
Self-Regulation								1.00	-.14	.25	.34	.38	.29	.22	.26	.12
Myth Viability									1.00	.05	.16	.19	-.08	.24	-.31	-.40
Narcissism										1.00	.42	.54	.32	.51	-.07	-.23
Need for Power											1.00	.54	.24	.52	.05	-.20
Self-Aggrandizement												1.00	.21	.59	.00	-.21
Fear													1.00	.33	.05	.06
Greed														1.00	-.13	-.29
Communality															1.00	.28
Honesty																1.00

Object beliefs were defined as the tendency to see others as tools who could be used to serve personal goals. Given the nature of this construct, it is not surprising that the derivative background data scale was positively related to the tendency to manifest poor life stories or life themes (r = .40), power motives (r = .45), and a propensity for self-aggrandizement (r = .43). In fact, these relationships are consistent with the earlier observations of Fromm (1973) and Winter (1973) concerning the behavioral implications of object beliefs and power motives. Similarity, because we live in a dynamic social world, one might argue that negative beliefs about outcomes would be related to negative beliefs about humanity and outcome uncertainty. In accordance with these hypotheses, sizable positive relationships were obtained between the scale measuring negative outcome beliefs and background data scales intended to measure negative beliefs about humanity (r = .62) and outcome uncertainty (r = .61).

Other examples of this sort might be cited. Nonetheless, the relationships reviewed above are sufficient to make our central point: The background data scales constructed to measure the relevant belief, motivational, and self-system constructs yielded an interpretable, substantively meaningful pattern of relationships. These scales, moreover, produced relationships consistent with the results obtained in earlier investigations. Thus, these correlations provide some evidence for the meaningfulness of the background data scales intended to measure attributes related to the propensity for destructive acts.

Reference Measure Correlations

More compelling evidence indicative of the meaningfulness of these scales might be obtained by considering their relationships with an independent set of personality measures. Thus, the 246 undergraduates participating in this study were also asked to complete a battery of reference measures during the two-hour group testing session. Table 4 presents a brief description of each of these reference measures.

To obtain evidence bearing on the meaningfulness of the background data scales, they were correlated with the various reference measures. The results obtained in this correlational analysis are presented in Table 5. In accordance with Dillehay's (1978) observations concerning the suspicious,

Table 4

Reference Measures

1. Shame and Guilt (Tangney, Wagner, & Gramzow, 1989).
2. Love (Rubin, 1970).
3. Trait Anger (Spielberger, Jacobs, Russel, & Crane, 1983).
4. Narcissism Personality Inventory (NPI) - Exploitiveness Subscale (Emmons, 1987).
5. Mach V (Christie & Geis, 1970).
6. Authoritarianism (Dillehay, 1978)[a].
7. Background Data Questionnaire (Owens & Schoenfeldt, 1979).

Note[a]: Items were modified to a background data format.

Table 5

Intercorrelations of Core Constructs with Other Pertinent Constructs

	Object Belief	Negative Beliefs About Humanity	Internal Locus of Control	Outcome Uncer-tainty	Negative Beliefs About Outcomes	Social Aliena-tion	Self-Esteem	Self-Regu-lation	Myth Via-bility	Narcis-sism	Need for Power	Self-Aggrand-izement	Fear
Authoritarianism	.15	.46	.12	.51	.39	.10	.00	.32	-.05	.35	.43	.46	.42
Anger	-.36	-.44	.11	-.42	-.48	-.34	.23	-.19	-.15	-.34	-.45	-.30	-.38
Exploitiveness	-.36	-.43	.02	-.39	-.29	-.16	-.05	-.30	-.15	-.37	-.55	-.46	-.20
Liking	-.28	-.01	.09	.06	-.03	-.23	.07	.26	-.25	.01	.02	.03	.11
Love	-.25	-.13	.11	-.11	-.20	-.19	.17	.19	-.31	-.09	-.11	-.04	-.07
Shame	-.07	.14	.06	.28	.35	.11	-.11	.06	-.17	.19	.10	.05	.43
Guilt	-.44	-.06	.17	.01	-.07	-.14	.04	.11	-.34	-.16	-.17	-.15	.11
Machiavellianism	.26	.22	-.06	.17	.17	.14	-.17	.08	.18	-.03	.10	.10	.07
Creativity	.00	.09	-.06	.09	.07	-.02	.10	.15	-.04	.11	.08	.08	.03
Academic Achievement	.07	.11	.26	.09	.00	-.26	.44	.20	.01	.02	.17	.24	-.02
Practical Intelligence	.04	-.15	-.02	-.08	-.06	-.11	.09	.06	.16	-.09	.04	.11	-.10
Work Ethic	-.21	.08	.27	-.01	-.01	.19	.20	.14	-.07	-.12	.05	-.04	.09
Achievement Motivation	.03	.14	.37	.19	.04	.15	.41	.17	-.09	.18	.15	.20	.11
Energy	-.05	-.07	.25	-.01	-.20	-.37	.47	.19	.04	.07	.05	.19	-.20
Social Adjustment	.07	-.13	.31	.03	-.26	-.62	.69	.23	.14	.02	.11	.18	-.18
Institutional Adaptation	-.12	-.12	.39	.06	-.11	-.36	.41	.14	-.17	.01	-.03	.11	.04
Persuasive Dominance	.07	.00	.26	.01	-.08	-.30	.61	.11	.11	-.07	.20	.10	-.15
Social Skills	.01	-.15	.32	.11	-.14	-.47	.53	.20	-.06	.04	.10	.11	-.04
Personal Adjustment	-.13	-.37	.39	-.24	-.51	-.61	.59	-.04	-.06	-.08	-.12	-.06	-.48
Positive Temperament	-.07	-.27	.44	-.03	-.47	-.57	.61	.09	.02	.05	-.06	.10	-.30
Openness	-.01	-.07	.25	-.03	-.20	-.41	.53	.19	.05	-.06	.07	.17	-.23
Independence	.06	.19	-.19	-.09	.08	.22	-.11	-.10	.01	-.16	.03	-.07	-.08
Traditional Values	-.21	-.28	.21	-.10	-.23	-.26	.22	.10	-.25	-.03	-.08	.02	-.03
Role Models	-.01	-.21	.39	.08	-.15	-.22	.29	.14	-.06	.20	.10	.13	.06

untrusting nature of authoritarians, it was found that our background data measure of authoritarianism was positively related to negative beliefs about humanity (r = .46), negative beliefs about outcomes (r = .39), and outcome uncertainty (r = .51). Similarly, the tendency of individuals expressing object beliefs to use others as tools would lead one to expect that this scale would yield negative relationships with measures of guilt (r = -.44), love (r = -.25), liking (r = -.28), traditional values (r = -.21), and work ethic values (r = -.21). The moderate positive relationship obtained in correlating scores on the object beliefs and Machiavellianism (r = .26) scales was also expected, based on the tendency of Machiavellians to manipulate others. Given Christie and Geis's (1970) observations concerning the adaptive components of Machiavellianism and the fact that some Machiavellians (e.g., Franklin Delano Roosevelt) might manipulate others for the greater good, it was not anticipated that this relationship would prove of overwhelming magnitude.

When the exploitiveness subscale of the Narcissistic Personality Inventory (NPI) and the trait anger scale were correlated with object beliefs, negative coefficients of -.36 were obtained. The NPI exploitiveness and trait anger scales also yielded negative correlations with background data scales intended to measure power motives, fear, myth viability, negative beliefs about humanity, and negative beliefs about outcomes. These negative relationships might at first glance be surprising, given the purported meaning of these constructs and their implications for destructive acts. These relationships, however, can be explained, based on the fact that both the exploitiveness and anger scales include items that call for overt admission of destructive acts. Because Fromm (1973) and Peck (1983), among others, have argued that destructive individuals often fail to recognize and take responsibility for their acts, these negative relationships might be taken to provide additional evidence for the background data scales' construct validity as well as their freedom from common response sets.

This argument finds some support in correlations between the fear scale and the various scales derived from the Owens and Schoenfeldt (1979) Background Data Questionnaire (Mumford, O'Connor, Clifton, Connelly, and Zaccaro, in press; Mumford and Owens, 1982). Although fear was linked to an

unwillingness to admit anger and exploitiveness, this scale yielded negative correlations with background data measures of personal adjustment (r = -.48), positive temperament (r = -.30), and social adjustment (r = -.18) obtained from the Owens and Schoenfeldt (1979) questionnaire. The scales derived from the Owens and Schoenfeldt (1979) questionnaire also provided evidence for the meaningfulness of the self-regulation scale, which yielded the expected positive relationships with measures of social adjustment (r = .23) and social skills (r = .20). Similarly, the self-esteem scale produced the expected positive relationships with measures of academic achievement (r = .44), personal adjustment (r = .59), positive temperament (r = .61), social skills (r = .53), openness (r = .53), energy (r = .47), and achievement motivation (r = .41). The social alienation scale, on the other hand, yielded the expected negative relationships with the academic achievement (r = -.26), social adjustment (r = -.62), personal adjustment (r = -.61), positive temperament (r = -.57), and social skills (r = -.47) scales derived from the Owens and Schoenfeldt inventory.

Taken as a whole, the pattern of relationships observed between these reference measures and our measures of the belief, motivational, and self-system constructs held to influence the propensity for destructive acts provide some compelling evidence for the meaningfulness of the background data scales developed to measure these constructs. This construct validity evidence, however, points to two other conclusions bearing on the characteristics of destructive individuals. First, destructive individuals are unlikely to admit destructive acts, although their propensity for these acts is manifest in more indirect items focusing on apparently neutral prior behavior and experiences. This observation, of course, provides a compelling argument for the application of background data measures in attempts to screen out destructive individuals. Furthermore, it is consistent with the observations of Kilcullen, White, Mumford, Mack, and Rigby (1991) and Mumford and Stokes (in press) indicating that well-constructed background data measures are less susceptible to faking than standard personality inventories. Second, it appears that destructive individuals have substantial difficulty in maintaining stable, positive social relationships and committing themselves to social institutions. Thus, information about work history,

school history, family relationships, and friendships may prove of substantial value in identifying these individuals. This observation, in turn, suggests that it might be possible to develop objective, potentially verifiable items for use in identifying these individuals that go beyond the traditional financial status items.

Developmental Influences

The Owens and Schoenfeldt (1979) questionnaire is also of interest because it included a subset of items intended to measure parental behaviors. The developmental influences scales derived from these parental behavior items are described in Table 6. Table 7 presents the correlations between these parental behavior scales and the background data scales intended to measure the belief, motivational, and self-system constructs held to influence the propensity for destructive acts.

Because these scales measure parental behaviors, or distal developmental influences, it was not anticipated that they would yield sizable correlations with our measures of the beliefs, motives, and self-system constructs held to influence the propensity for destructive acts. Nonetheless, these scales did yield some moderate relationships painting a coherent picture of the kind of family environment likely to produce destructive individuals. As may be seen, a lack of paternal warmth, parental disengagement, family conflict, and the use of concrete, rather than emotional, rewards contributed to social alienation ($\bar{r}$ = .23), negative beliefs about outcomes ($\bar{r}$ = .19), and low self-esteem ($\bar{r}$ = .39).

This pattern of correlates is of interest because it suggests that a cold, unsupportive family environment generates a lack of commitment to and trust in others, thereby laying a groundwork for later destructive acts. This finding, of course, suggests that family environment might be considered in screening young adults who lack extensive career histories. More centrally, however, this pattern of developmental influences is consistent with the earlier observations of Fromm (1973) and Reid and Patterson (1989) concerning the origins of human destructiveness, and it helps explain why destructive individuals have substantial difficulty in interacting with others in a positive, constructive fashion. As a result, these developmental correlates provide further, rather compelling evidence for the

Table 6

Description of Developmental Scales

Scale Label	Description of Items in Scale
Paternal Warmth	Discussed intimate and/or important matters with father; spent more time with father as compared with friends; was close to father; father did not neglect or treat coldly.
Maternal Warmth	Discussed intimate and/or important matters with mother; spent time with mother as compared with friends; was closer to mother; mother supplied emotional support and showed interest.
Parental Conscientiousness	Parents interested in activities; parents discussed possibilities and offered suggestions; parents expressed confidence in ideas.
Parental Rewards	Parents rewarded/encouraged you; parents were consistent in praise and rewards; parents gave attention, praise, and affection when you performed well.
Family Exposure	Parents encouraged exploration of new experiences, new situations; parents entertained guests, exposed to all kinds/sorts of people; lived in metropolitan area.
Parental Control	Parents did not allow freedom in grade school and high school; decisions were not made democratically in home; parents did not allow you to see visitors at home; rules at home were rigid and inflexible.
Negative Parental Behavior	Parents often criticized them; parents were often angry; parents did not encourage expression of feelings; father and mother nagged/pushed for better achievements.
Family Conflict	Disagreed with parents; rules of home angered/frustrated them; parents generally disagreed with ideas; political views did not resemble parents.
Non-Parental Support	Had close relationships with brothers and/or sisters; felt that hard times given by brothers/sisters were justified; teachers liked and respected them; teachers showed faith in them.

Table 7

Intercorrelations of Core Constructs and Parental Behavior Scales

	Object Belief	Negative Belief About Humanity	Internal Locus of Control	Outcome Uncertainty	Negative Belief About Outcomes	Social Alienation	Self-Esteem	Self-Regulation	Myth Viability	Narcissism	Need for Power	Self-Aggrandizement	Fear
Paternal Warmth	-.03	-.15	.29	-.05	-.22	-.22	.29	-.04	.03	.00	-.14	-.07	-.10
Maternal Warmth	-.05	-.01	.62	.11	-.05	-.16	.38	.08	-.03	.18	-.01	.08	.06
Parental Conscientiousness	-.04	-.17	.65[a]	.01	-.21	-.25	.48	.11	-.05	.05	-.04	-.01	-.08
Parental Rewards	-.03	-.10	.65[a]	.09	-.11	-.20	.40	.20	-.14	.23	-.01	.07	.09
Family Exposure	.04	-.10	.36	-.09	-.08	-.24	.41	.17	.08	.02	.09	.12	-.07
Parental Control	-.08	.03	-.74[a]	.00	.06	.14	-.38	-.04	-.16	.02	-.02	-.03	.06
Negative Parental Behaviors	.09	.11	-.58	.07	.17	.17	.36	-.01	.10	-.01	.15	.04	.03
Family Conflict	.05	.10	-.56	-.05	.13	.26	-.44	-.09	.05	-.07	.07	-.03	.03
Nonparental Support	-.08	-.27	.41	-.01	-.23	-.36	.37	.27	-.07	.12	-.01	.05	-.05

Note[a]: There is some overlap of items between the Internal Locus of Control scale and this scale.

meaningfulness of our background data scales intended to measure the beliefs, motives, and self-system constructs held to influence the propensity for destructive acts.

Internal Model

Hypotheses and Procedures

Our foregoing observations indicate that the belief, motive, and self-system scales provided a meaningful assessment of differential characteristics influencing the propensity for destructive acts. This evidence, however, focuses on discrete scales. This focus is problematic because our earlier observations indicated that these constructs operate as part of a complex syndrome. This syndrome holds that the beliefs which exert a direct influence on the propensity for destructive acts emerge, over the course of development, from more basic motives and self-concepts which may themselves exert some direct effects on the propensity for destructive acts.

To obtain some initial evidence for these structural hypotheses concerning relationships among the belief, motivational, and self-system constructs, a formal multivariate modeling effort was conducted. Initially, correlations among the belief, motivational, and self-system scales were obtained. The ability of the structural model presented in Figure 1 to account for the observed scale correlations in the undergraduate sample was then assessed in a Lisrel VI maximum- likelihood analysis of covariance structures. This model was initially specified such that each motive and self-system construct was held to act as a potential cause of all five beliefs. Additionally, this model was specified such that (1) the motivational and self-system constructs were held to be correlated with each other, and (2) certain basic beliefs arising from early family experiences, such as negative beliefs about outcomes and outcome uncertainty, were held to act as potential causes of more complex beliefs, such as object beliefs and beliefs about humanity.

After this initial *a priori* model was subjected to the Lisrel VI analysis of covariance structures, the significance of the resulting path coefficients was established. All insignificant paths from the

motivational and self-system constructs to the beliefs were eliminated along with all insignificant paths linking the lower-order and higher-order beliefs. This revised model was then tested in a second Lisrel VI analysis. The resulting root mean square residual term and the adjusted goodness of fit index were used to assess the ability of this revised model to account for the observed correlation matrix. Additionally, Bentler's (1990) normed and nonnormed fit indices were obtained to provide a more stable and accurate assessment of the ability of this model to account for the observed scale correlations.

Model Characteristics

The model constructed to account for the impact of motives and self-system constructs on the various beliefs is presented in Figure 2. This model yielded a root mean square residual term of .01. The associated goodness of fit index was .96, while the Bentler (1990) normed and nonnormed fit index was .98 and 1.02, respectively. These fit indices and the root mean square residual term indicate that this model provided an adequate description of relationships among the belief, motivational, and self-system constructs held to influence the propensity for destructive acts.

The general structure of the model presented in Figure 2 has three noteworthy implications. First, both the motivational and self-system constructs contributed to expression of beliefs held to influence the propensity for destructive acts. Second, these beliefs were subject to a complex set of causal influences such that four or five motives and self-system constructs typically influenced expression of each belief. Third, these motivational and self-system constructs, in aggregate, accounted for a substantial portion of the variance in belief expression. The multiple Rs obtained for object beliefs ($\underline{R}$ = .65), negative beliefs about humanity ($\underline{R}$ = .73), control beliefs ($\underline{R}$ = .55), outcome uncertainty ($\underline{R}$ = .78), and negative beliefs about outcomes ($\underline{R}$ = .77) were sizable, indicating that this model allowed us to effectively account for beliefs influencing the propensity for destructive acts.

These general trends aside, some attention should be given to the specific ways in which motives and self-system constructs influenced beliefs. Because alienated individuals are less likely to incorporate positive images of others into their self-concepts, it is not surprising that alienation contributed to negative

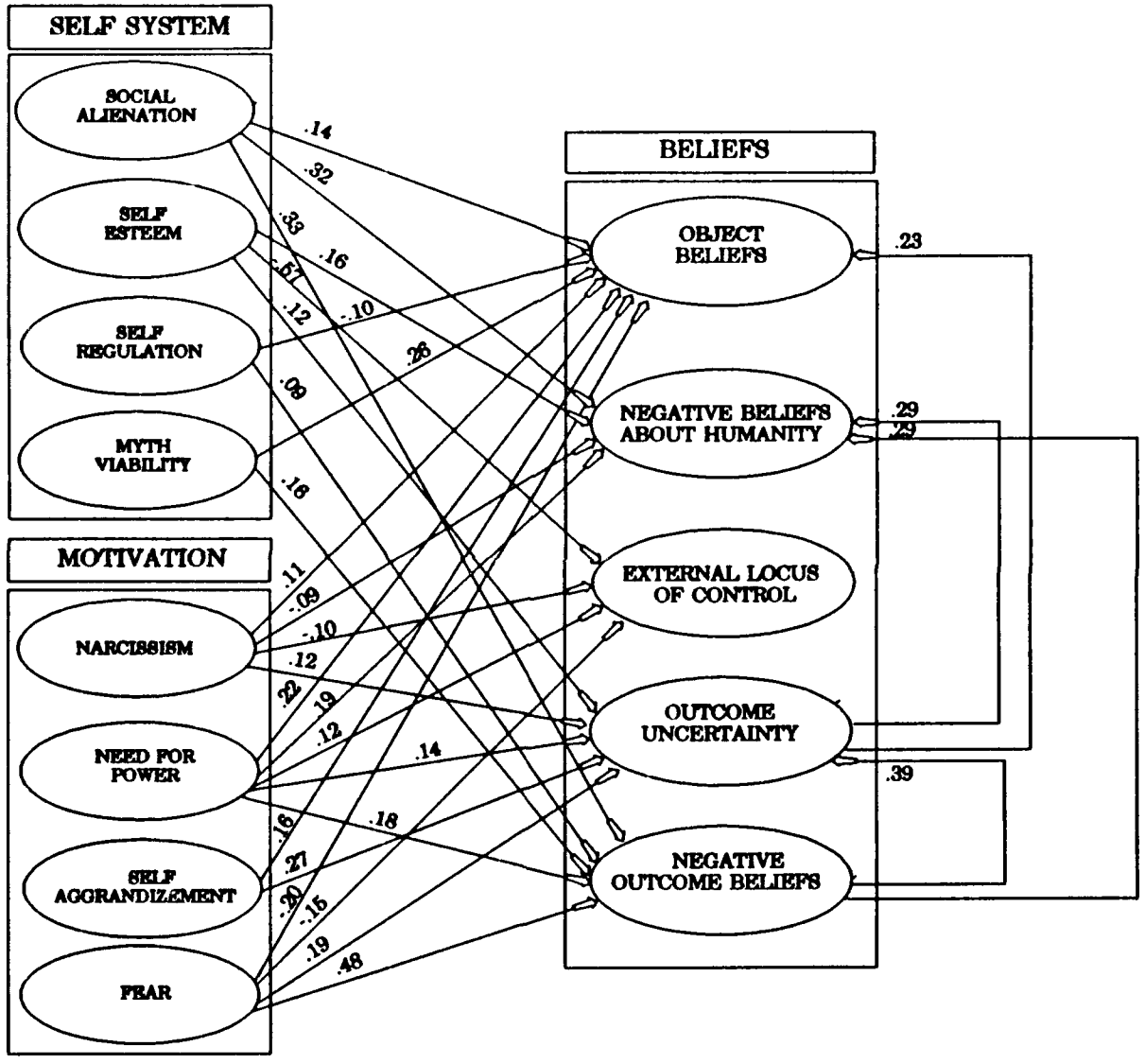

FIGURE 2. PATH MODEL OF CORE CONSTRUCTS

beliefs about humanity (b = .32) and object beliefs (b = .14). The impact of alienation on outcome beliefs (b = .33) may be attributed to the tendency of alienated individuals to withdraw from situations associated with positive social outcomes. The myth viability construct reflects the use of life stories or themes that are not well-integrated with societal concerns. Poor stories, by virtue of their ability to guide actions and interpretation of life events, may make it difficult for people to make positive commitments to others, thereby influencing object beliefs (b = .26) and, vis-à-vis others' actions and the interpretations they apply to them, negative outcome beliefs (b = .16).

Pulkkinen's (1982) observations indicate that self-regulation should have a negative impact on object beliefs (b = -.10): a hypothesis confirmed in this modeling effort. Our finding that self-regulation contributed to negative beliefs about outcomes (b = .09) is surprising, but may reflect a natural outcome of the critical evaluative tendencies associated with self-regulation (Bandura, 1989; Higgins, 1989). As expected, self-esteem had a strong direct effect on locus of control (b = -.57). Self-esteem, however, also contributed to negative beliefs about humanity (b = .16) and outcome uncertainty (b = .12), perhaps because high self-esteem engenders a concern with personal achievement that will not always be forthcoming in a complex and competitive social world.

In keeping with Fromm's (1973) observations concerning the impact of narcissism on human destructiveness, narcissism influenced both object beliefs (b = .11) and outcome uncertainty (b = .12). On the other hand, however, narcissism contributed to positive beliefs about humanity (b = .09) and internal control beliefs (b = .10). These results seem consistent with the earlier observations of Tangney, Wagner, Fletcher, and Gramzow (in press) indicating that narcissism, by contributing to positive self-evaluations, may have some positive developmental influences, at least when the effects of other variables, such as power motives and self aggrandizement, are taken into account. Although there is reason to suspect that narcissism is linked to self-aggrandizement (Emmons, 1987), self-aggrandizement appears to represent a distinct construct (Raskin, Novacek, & Hogan, 1991) yielding a unique pattern of effects on beliefs contributing to the propensity for destructive acts. Self-aggrandizement, unlike

narcissism, influenced only object beliefs (b = .16) and outcome uncertainty (b = .27), reflecting the need for positive feedback and perhaps a tendency to use others in the pursuit of personal acclaim.

In contrast, anxious, fearful individuals may find it difficult to tolerate the risks entailed in manipulating others while simultaneously seeking environmental control to protect themselves from perceived threat. Accordingly, fear had a negative impact on object beliefs (b = -.20), but a positive impact on outcome uncertainty (b = .19) and control beliefs (b = .15). Fear, however, exerted its strongest effect on negative beliefs about outcomes (b = .48): a result attributable to the tendency of anxious individuals to perceive threat and potential loss (Riskind, Hohman, Beck, & Stewart, 1991). Power motives, on the other hand, can be satisfied from time to time by using others and denigrating others in the search for control and influence (Bennett, 1988; Winter, 1973, 1987b). As a result, power motives influenced object beliefs (b = .22) and negative beliefs about humanity (b = .19). By the same token, however, those who seek control and influence are dependent on the people around them. Due to this dependency, power motives were also associated with external control beliefs (b = .12), outcome uncertainty (b = .14), and negative beliefs about outcomes (b = .18).

Although motives and self-system constructs exerted strong direct effects on beliefs, some of their effects were indirect, brought about by the existence of causal relationships among the beliefs. Outcome uncertainty implies that people are unsure that they can satisfy their needs in the course of normal social intercourse. Accordingly, this belief structure led to negative beliefs about humanity (b = .29). By encouraging engendering a self-protective tendency to use others as a strategy for attaining apparently uncertain goals, outcome uncertainty also led to the expression of object beliefs (b = .23). Outcome uncertainty, itself, was influenced by negative beliefs about outcomes (b = .39), a phenomenon perhaps resulting from attempts to obtain positive outcomes despite contradictory experiences (Meadows, 1987). Finally, negative beliefs about outcomes led to negative beliefs about humanity (b = .29): a finding not at all surprising in a world where many significant outcomes are determined by the actions of others.

The interpretability of these structural relationships, of course, provides additional evidence for the meaningfulness of the background data scales intended to measure the beliefs, motives, and self-concepts held to influence the propensity for destructive acts. More centrally, however, these relationships and the various fit indices provide some compelling support for the theoretical model used to specify these constructs, while suggesting that one might predict destructive acts using either measures of beliefs or the motives and self-concepts giving rise to these beliefs. Both assessment strategies may prove useful since beliefs have a direct impact on destructive acts, while motives and self-concepts imply that these beliefs are not localized and may represent an enduring characteristic of the individual. In most cases, however, one will wish to consider both beliefs and generative motives and self-concepts in prediction to obtain a truly comprehensive assessment and maximum prediction. In fact, the results obtained in our predictive analyses tend to bear out this hypothesis.

Predictive Models

Procedures

Criterion measures. To establish the predictive validity of these constructs, it was necessary to obtain measures reflecting the propensity for destructive acts. Because different forms of destructive acts may emerge from these beliefs, motives, and self-system constructs depending on the situation to which people are exposed, multiple measures of destructive behavior seem called for. Furthermore, because situational exposure is contingent on the age grading of behavior (Havinghurst, 1953; Mumford, Reiter-Palmon, & Snell, in press), it seemed necessary to obtain measures of the kind of destructive behaviors that might occur reasonably frequently in a normal adolescent population.

As a result, an attempt was made to generate measures of three forms of destructive behavior likely to be observed in a nonclinical adolescent population. Greed, for instance, has been defined as the tendency to maximize one's own gains at the expense of others (Rapoport & Eshed-Levy, 1989; Yamagishi & Sato, 1986). Because actions of this sort imply harm to others, an attempt was made to

formulate a measure of greed. Alternatively, it might be argued that destructive individuals are unlikely to engage in activities that contribute to the common good. Therefore, Kaplan's (1980) description of communality was used to construct a measure intended to reflect willingness to work for the good of others. Finally, Fromm (1973) and Peck (1983) have argued that destructive individuals tend to be dishonest. Thus, a scale intended to capture individual differences in dishonesty was employed as the third criterion measure.

The items included in the scales intended to measure greed, communality, and dishonesty were generated using the procedures described earlier. Thus, a panel of psychologists was asked to generate and screen background data items intended to measure these three criteria. To minimize priming and demand characteristics, the resulting background data items were mixed, in random order, with the background data items intended to measure the relevant belief, motivation, and self-system constructs to the 246 undergraduates who participated in our initial psychometric investigation.

Table 8 presents a description of the items included in the greed, communality, and dishonesty scales along with the internal consistency coefficients, means, and standard deviations obtained in the undergraduate sample. With regard to the data presented in Table 8, two further comments seem in order. First, the means and standard deviations of scale scores indicate that these scales produced a near-normal distribution, thereby minimizing the potential response distortion. Second, these scales produced internal consistency coefficients ranging from .56 to .79, indicating that they captured substantial true variance in item responses attributable to greed, communality, and dishonesty.

Criterion models. Once these criterion measures had been formulated, an attempt was made to determine whether the belief, motivational, and self-system constructs could be used to predict each criterion measure using an extension of the multivariate modeling strategy described earlier. In constructing these models, it was assumed that relationships among the belief, motivational, and self-system constructs could be plausibly described by the model derived in the preceding set of analyses. Thus, this model was used to specify relationships among the belief, motivational, and self-system

Table 8

Items in the Greed, Communality, and Honesty Criterion Scales

Greed **Alpha = .79, x = 21.41, SD = 5.63**

1. How often have you wished you could win the lottery?
2. To what extent have you felt that you could never make enough money?
3. How often have you replaced your car, stereo, or T.V. in order to have the latest advancement?
4. To what extent have you tried to "keep up with the Jones'"?
5. How likely are you to compare yourself to others with regard to possessions?
6. How important are status symbols such as car, house, or jewelry to you?
7. To what extent did you pick your present major based on future income possibilities?
8. Relative to others, to what extent are you frustrated by your lack of personal comforts?

Communality **Alpha = .71, x = 28.84, SD = 5.77**

1. How often have you participated in a public march or demonstration?
2. How annoyed have you become by people who forget to vote?
3. How much time have you spent worrying about social problems such as homelessness or poverty?
4. To what extent has it been important for you to recycle?
5. How often have you written your representatives about issues that concern you?
6. Relative to others, how much of your free time have you spent doing community service?
7. How often have you felt that optimistic coworkers were really naive?
8. How often have you found yourself getting riled when discussing social problems?
9. How often have you organized your friends for volunteer work?
10. To what extent did you select your current major out of concern for helping others?
11. How often have you intervened when you saw other people being treated unfairly?

Honesty **Alpha = .56, x = 23.53, SD = 2.85**

1. Relative to others, if a cashier gives you too much money back, how likely have you been to give it back?
2. How important is it to you to have honest friends?
3. How important is it to you that someone tells you the truth?
4. Relative to others, how honest do you think you are?

constructs which was held to apply to all three forms of destructive behavior. To determine whether this basic structural model could be extended to account for each form of destructive behavior, three models were constructed where each criterion measure was, in turn, treated as a final endogenous variable. In each model, it was held that the five beliefs acted as causes of a given criterion measure. Furthermore, it was held that the motivational and self-system constructs might exert direct effects on each form of destructive behavior, apart from their effects on beliefs.

To assess the ability of this general structural model to account for expression of a given form of destructive behavior, correlations between the criterion measure and the belief, motivational, and self-system scales were obtained. The ability of this model to account for greed, communality, and dishonesty was, in turn, established using a Lisrel VI maximum-likelihood procedure for the analysis of covariance structures. The significance of the path coefficients describing the impact of the beliefs, motivational, and self-system constructs on greed, communality, and dishonesty was then established. Insignificant paths were subsequently eliminated, and these revised models were again tested in a Lisrel VI analysis. The ability of the revised models to account for greed, dishonesty, and communality was assessed using the resulting root mean square residual and the adjusted goodness of fit index, along with Bentler's (1990) nonnormed fit index.

Greed

Figure 3 presents the structural model formulated for greed under conditions where causal relationships among the belief, motivational, and self-system constructs were fixed, and all these constructs allowed to load on greed. After eliminating insignificant paths, the model yielded an adjusted goodness of fit index of .95 and Bentler (1990) normed and nonnormed fit index of .93 and 1.02. Given these fit statistics and a root mean square residual term of .02, it seems reasonable to conclude that this model could account for relationships among greed and the belief, motivational, and self-system constructs held to influence the propensity for destructive acts. Some support for this conclusion may

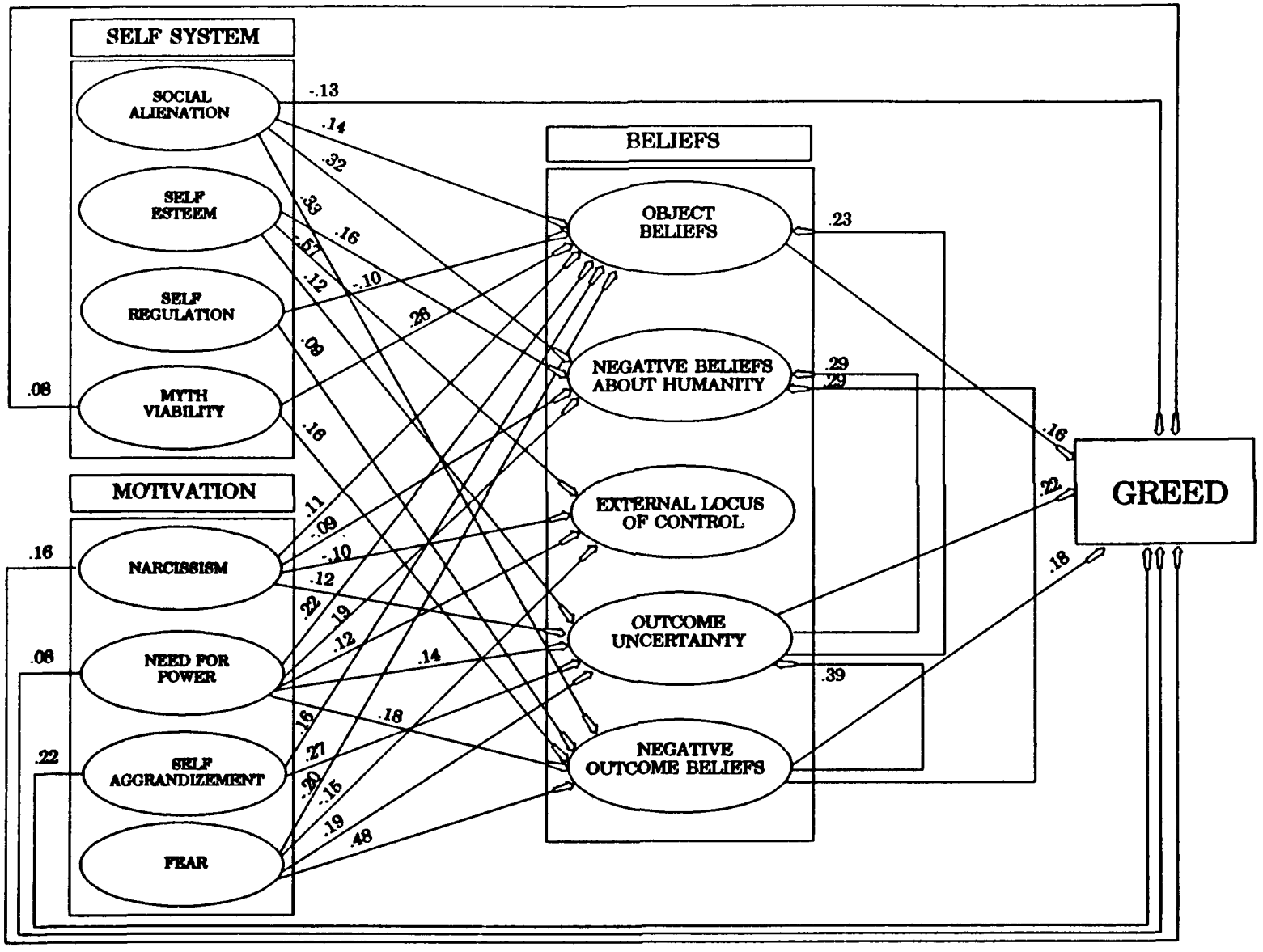

FIGURE 3. PATH MODEL FOR PREDICTING GREED

be found in the multiple R of .74 obtained when the significant paths obtained from the belief, motivational, and self-system constructs were used to account for greed.

Earlier, we noted that greed reflects the tendency to maximize one's own gains at the expense of others. Accordingly, variables, such as outcome uncertainty (b = .22), self-aggrandizement (b = .22), negative beliefs about outcomes (b = .18) and narcissism (b = .16), that lead people to seek concrete, material rewards as a means of self-protection and self-expansion, all exerted direct effects on greed. Because, moreover, the acquisition of material objects provides one way of establishing status and influence, the direct effects produced by power motives (b = .08) were not unexpected.

Some indirect support for this hypothesis may be found in the negative impact of social alienation (b = -.13) on greed. By virtue of their tendency to withdraw from social situations, alienated individuals may feel less compelled to establish status through acquisition and display. On the other hand, stories or life themes that do not entail commitment to others may engender a lack of regard for others' needs, thereby leading myth viability to exert direct effects on greed (b = .08). The tendency to believe that others can be used as tools also leads to a lack of regard for others and a tendency to use them for personal gain. When these effects are coupled with the justification dehumanizing beliefs provide for destructive acts, they may account for the influence of object beliefs on greed (b = .16).

Dishonesty

People can also harm others by providing them with inaccurate or misleading information. When the belief, motivational, and self-system constructs were used to generate a model intended to account for dishonesty, the resulting root mean square residual was .02. The adjusted goodness of fit index and Bentler (1990) normed and nonnormed fit index yielded values of .96, .91, and 1.04. Taken as a whole, these statistics indicate that the belief, motivational, and self-system constructs could also be used to account for dishonesty. In fact, the paths retained in this modeling effort produced a multiple R of .62. Figure 4 presents the path coefficients that made significant contributions to predicting dishonesty in this modeling effort.

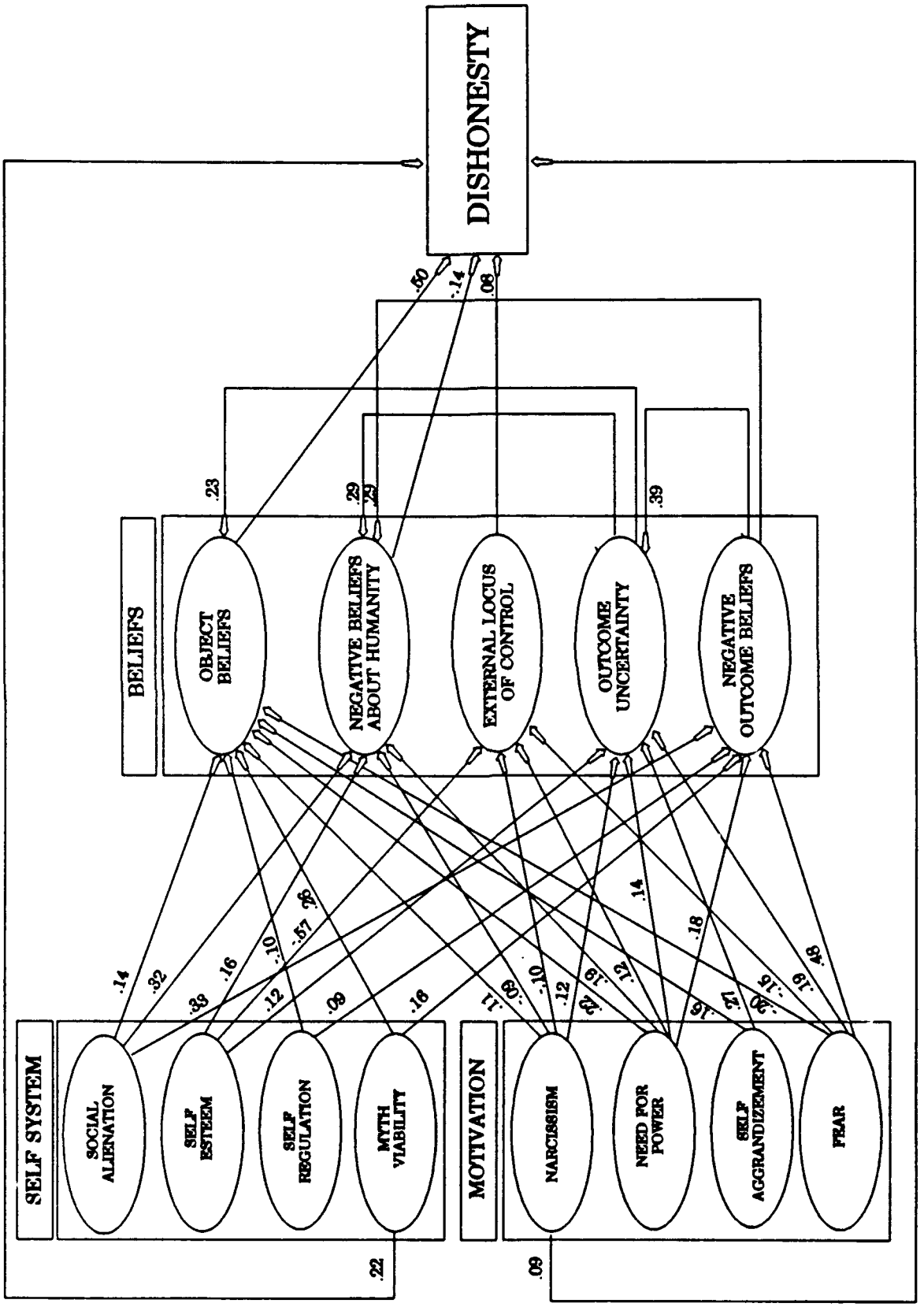

FIGURE 4. PATH MODEL FOR PREDICTING DISHONESTY

Dishonesty often entails manipulating others' beliefs in the service of personal goals. Thus, it was not surprising that object beliefs (b = .50) exerted strong direct effects on dishonesty. Dishonesty, however, might also be influenced by dependence on others and a need to maintain a positive image in their eyes. Accordingly, narcissism (b = .09) and external control beliefs (b = .08) were found to influence dishonesty. Use of life stories or themes that reflect a negative image of life also contributed to dishonesty (b = .22), perhaps because other people's reactions to these images dictate a certain amount of lying, and because these images may include a deceptive, exploitive component. Finally, dishonesty was effected by negative beliefs about humanity (b = -.14), indicating that toughminded, suspicious people tend to be honest, at least when other effects are controlled. Although this finding may at first seem surprising, it may reflect the tendency of toughminded people to speak their minds, even when others might be hurt.

Communality

Unlike dishonesty or greed, communality, or actions contributing to the well-being of others, cannot be viewed as a destructive act. Rather, it is low communality, or a failure to take action contributing to the well-being of others, that is of concern herein. Figure 5 presents the model used to account for differences in communality. This model yielded an adjusted goodness of fit index of .96 and Bentler (1990) normed and nonnormed fit index of .91 and 1.06. The associated root mean square residual term was .02. Again, these fit statistics indicate that the belief, motivational, and self-system constructs could account for variance in people's willingness to take action on the behalf of others. These variables, in fact, produced a multiple R of .53 when used to predict communality.

If people believe others can be used as tools and are basically untrustworthy, they are unlikely to work on their behalf. Accordingly, we found that object beliefs (b = -.30) and beliefs about humanity (b = -.15) had a negative impact on communality. Similarly, if a person is using a life theme or story that does not include constructive social accomplishment, he/she should be less likely to involve

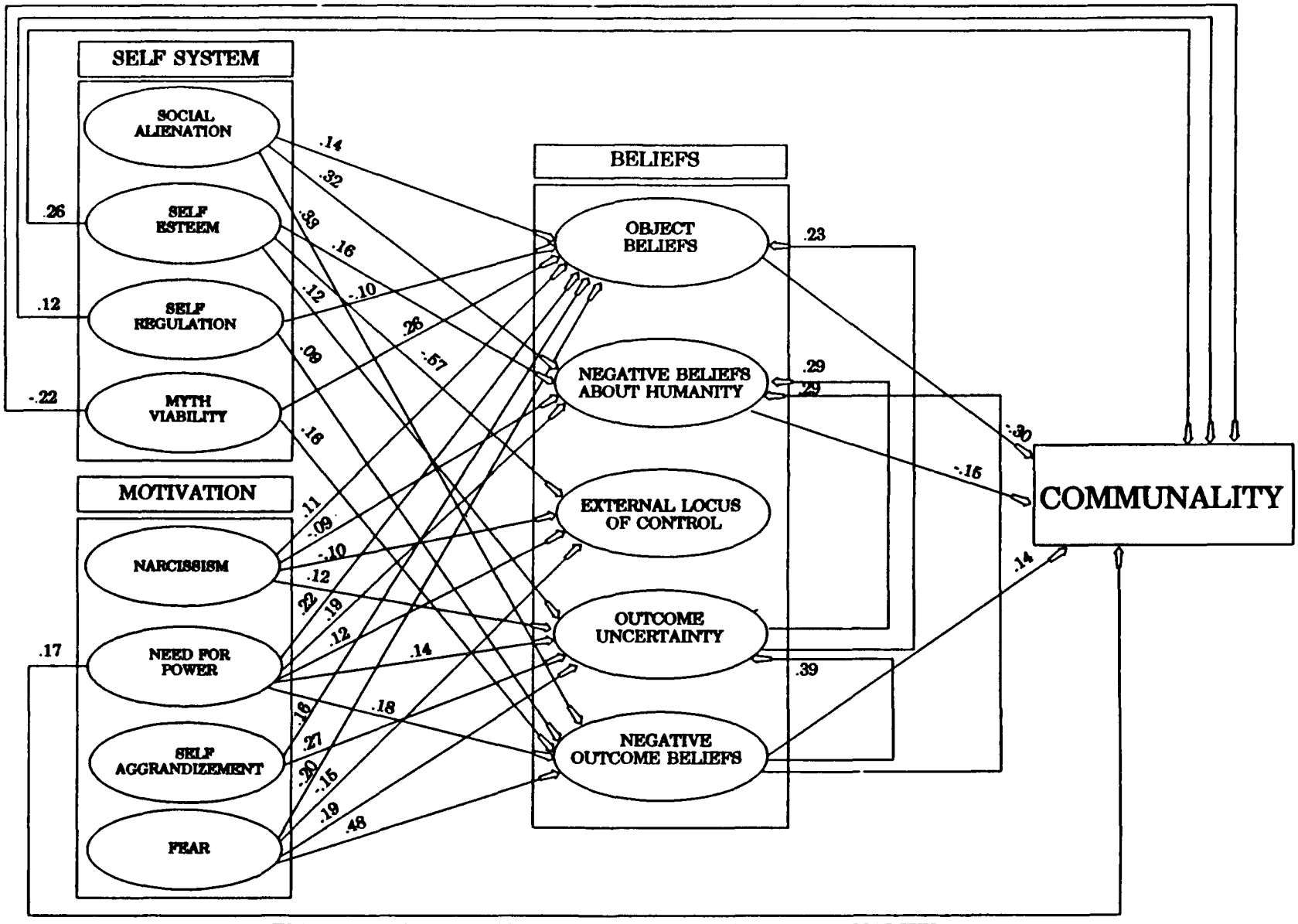

FIGURE 5. PATH MODEL FOR PREDICTING COMMUNALITY

themselves in activities that contribute to the well-being of others. Myth viability (b = -.22), as a result, had a negative impact on communality.

When variables, such as object beliefs and beliefs about humanity, are accounted for, negative beliefs about outcomes (b = .14) actually contributed to communality. This effect may reflect little more than a tendency to work with others to cope with a perceived threat. Working with others on common tasks, of course, provides a vehicle for influencing others (Bennett, 1988; Winter, 1973). Thus, it was not surprising that power motives (b = .17) also influenced communality. Similarly, Bandura's (1986, 1989), Becker's (1973, 1975), and Pulkkinen's (1982) observations lead one to expect, in accordance with our findings, that self-esteem (b = .26) and self-regulation (b = .12) would contribute to communality by encouraging individuals to work with others and ensuring positive feedback for their efforts.

Conclusions

Taken as a whole, these models indicate that our background data measures of the beliefs, motivations, and self-concepts can account for a substantial portion of the variance in propensities for destructive acts observed in adolescent populations. Although the specific nature of the path coefficients shifts as a function of the criterion at hand and the situations calling forth criterion behaviors, these constructs consistently predicted all three forms of destructive behavior. Thus, there is reason to suspect that these constructs might provide a general framework for the description, prediction, and understanding of destructive acts.

Field Prediction

Sample

To obtain evidence bearing on the meaningfulness of these scales in field settings, arrangements were made to administer a select set of background data items to first-line, civilian supervisors in the U.S. Department of the Army. These items were administered as part of a larger effort concerned with predicting performance in lower-level managerial positions. In all, 1,204 first-line supervisors

participated in this project. Subjects were assigned to a validation and cross-validation sample using a random two-thirds/one-third split.

Predictors

Background data items were generated in a panel meeting to measure five constructs derived from the models described above. These items were intended to measure (1) object beliefs, (2) social alienation, (3) self-esteem, (4) fear, and (5) power motives. Items were again cast in a five-point, multiple-choice format. After screening items for internal consistency, 3 to 13 items were included in the final version of each scale. These scales produced internal consistency coefficients ranging between .33 and .51 while yielding a median internal consistency coefficient of .48. Apparently, a larger number of items would be required to obtain adequate reliability. Although this limitation was recognized at the outset of the study, demands of testing time and administrative considerations effectively prohibited administration of a large number of background data items focusing on constructs influencing socially destructive behavior.

Even bearing this caveat in mind, these scales evidenced some construct validity when correlated with each other in the validation sample. Table 9 displays the correlations among these scales in the sample of U.S. Army civilian supervisors. Again, our measure of object beliefs yielded the expected positive correlation with power motives ($\underline{r}$ = .16). Similarly, the measure of social alienation administered to the supervisors produced the negative relationships with self-esteem ($\underline{r}$ = -.21) and power motives ($\underline{r}$ = -.19) observed in the adolescent sample.

Although other examples of this sort might be cited, the correlations presented above illustrate a basic point. When one takes into account the lower reliability of the measures used in the field study, the pattern of correlations observed in the supervisory sample is similar to that observed in the adolescent sample. Thus, these correlations provide some evidence for the generality of our background data measures of constructs related to socially destructive acts. The issue of generality aside, it should be noted that our earlier discussion of the substantive implications of these correlations indicated that this

Table 9

Correlations Among Background Data Measures of Destructiveness in a Field Sample

			Betas				
	r[a]	N[b]	Object Beliefs	Social Alienation	Self-Esteem	Fear	Power Motives
Object Beliefs	.51	7	1.00	-.05	.13	.32	.16
Social Alienation	.33	3		1.00	-.21	-.02	-.19
Self-Esteem	.48	12			1.00	-.18	.43
Fear	.50	4				1.00	-.23
Power Motives	.47	13					1.00

Note[a]: Internal consistency.
Note[b]: Number of items included in scale.

pattern of relationships is consistent with available theoretical and empirical observations. As a result, it seems reasonable to conclude that our background data measures of the constructs underlying destructive acts also evidenced some construct validity in the supervisory sample.

Criteria

As part of the larger investigation into supervisory performance, criterion measures reflecting the performance of incumbent supervisors were obtained. The first set of criterion measures consisted of subjective evaluations of subject's performance. Here, the subject's immediate supervisor and his/her second-level supervisor were asked to evaluate performance using a series of rating scales. These rating scales asked judges to evaluate performance on 13 behavioral dimensions held to underlie managerial performance across a range of positions (e.g., administration, planning, communication). Criterion scores reflecting overall evaluations of performance were obtained by summing the discrete dimensional ratings obtained from (1) the subject's manager and (2) the subject's second-level supervisor. These two judgmental criteria yielded a correlation of .56 in the validation sample, indicating adequate interrater agreement for research purposes.

In addition to these two judgmental criteria, two additional criterion measures were obtained. The first measure consisted of a series of self-report items describing past achievements (e.g., awards). This measure has been shown to yield virtually perfect agreement with organizational records while yielding correlations on the order of .30 with managerial appraisals of performance. The second measure was a defensiveness scale. This scale contained four background data items, yielding an internal consistency coefficient of .44, that examined the tendency to protect one's self at the expense of others in the kind of social situations that permeate managerial positions. This scale yielded the expected weak negative correlations ($-.10 < \underline{r} < .00$) with the administrative and judgmental performance criteria.

Criterion Analyses

Table 10 presents the correlations of the background data scales with these four criterion measures. In accordance with Bass's (1981) observations concerning the impact of power motives on managerial performance, this scale yielded weak positive correlations with supervisors' (r = .11) and managerial (r = .05) evaluations of performance in the validation sample. This scale also produced moderate positive correlations with performance on the administrative "awards" measure (r = .17). Our self-esteem scale (r = .15) also produced the expected positive correlation with performance, as indexed by the awards measure. Finally, the fear (r = -.12) and social alienation (r = -.06) scales yielded the expected negative relationships with performance on the awards measure. Given the implications of these scales for effective social engagement, it was not surprising that they produced weak negative relationships with a measure reflecting exceptional service.

Two sizable correlations were observed for the defensiveness scale. In the validation sample, our measure of fear yielded a correlation of .37 with defensiveness. This finding might be attributed to the fact that anxious, fearful people tend to perceive threat and act to defend themselves against these perceived threats. On a somewhat more subtle level, object beliefs produced a positive correlation with defensiveness (r = .31). This correlation might be attributed to the tendency of people who use others to feel some need to protect themselves from the consequences of their acts.

Table 10 also presents the results obtained when these four criteria were regressed on our measures of the constructs related to destructive acts in the validation sample. The cross-validated multiple *R*s obtained when these equations were applied in the holdout sample are also presented. As may be seen, the background data scales produced weak multiple *R*s when used to predict the immediate (R_v = .14; R_{cv} = .06) and upper-level (R_v = .16; R_{cv} = -.01) judgmental evaluations of performance. One explanation for this finding is that destructiveness is not related to performance in managerial positions. An alternative explanation, however, might hold that the ability of destructive individuals to

Table 10

Correlations and Regressions of Background Data Scales with Criterion Measures in a Field Sample

	Criterion Measures			
	Immediate Supervisor[a,b]	Manager[a,b]	Awards Record[a,b]	Defensiveness[a,b]
Object Beliefs	-.01 (.00)	.03 (.08)	-.02 (-.04)	.31 (.20)
Social Alienation	-.08 (-.07)	-.08 (-.09)	-.06 (-.03)	-.07 (-.04)
Self-Esteem	.04 (-.03)	-.03 (-.10)	.15 (.08)	.03 (.05)
Fear	-.08 (-.06)	-.09 (-.13)	-.12 (-.06)	.37 (.31)
Power Motives	.11 (.09)	.05 (.03)	.17 (.12)	-.01 (.00)
R Validation	.14	.16	.21	.43
R Cross-Validation	.06	-.01	.23	.36

Note[a]: Initial values reflect bivariate correlations between background data scales and criteria.
Note[b]: Values in parentheses reflect standardized regression weights obtained when background data scales were used to predict each criteria in a forced-entry analysis.

mask their behavior and ingratiate themselves to supervisors makes it difficult to capture this behavior using judgmental evaluations.

Some support for this latter interpretation was provided by the criterion measure focusing on objective awards and defensiveness. In both cases, sizable initial multiple *R*s of .21 and .43 were obtained, which, upon cross-validation, shrunk to .23 and .36, respectively. Thus, it appears that these scales may be related to criteria less subject to social appraisal influences. As might be expected, based on the correlations presented above, the power motives ($\underline{B}$ = .12) and self-esteem ($\underline{B}$ = .09) scales produced sizable regression weights against the awards criterion, while the object beliefs ($\underline{B}$ = .20) and fear ($\underline{B}$ = .31) scales produced sizable regression weights against the defensiveness criteria. These regression weights are of interest in part because they indicate that the background data scales are related to performance in an interpretable, substantively meaningful fashion, and in part because they indicate that destructive constructs may be related to performance in a complex fashion contingent on situational demands. These observations, in turn, suggest that effective prediction using these constructs may require significant situational moderators to be accounted for and entail assessment of all relevant constructs as part of a complex behavioral syndrome.

Discussion

Before turning to the broader implications of the present study, certain limitations inherent in the present effort should be noted. To begin, we focused on variables influencing the propensity for destructive acts in a normal, nonclinical population. As a result, some caution is called for in generalizing these findings to violent criminals or other abnormal populations where other variables might influence the propensity for destructive acts (Hare, 1982; Walters, 1990; Wong, 1988). Furthermore, although some evidence was accrued for the validity of these measures in an older, adult population, the bulk of the evidence obtained in this investigation focused on individuals in late adolescence or early young adulthood. Thus, further studies intended to establish the generality of any conclusions drawn

herein seem called for. Finally, it should be recognized that the present study relied on one particular type of background data measure. Thus, there is a need to determine whether alternative formats for collecting and scoring this life information, such as more objective, verifiable items, would yield similar results. Bearing these caveats in mind, we nonetheless believe that the present study has some important implications for both the development of background data measures and the description, prediction, and understanding of security breaches.

With regard to the development of background data measures, our findings appear to address two central issues. First, background data measures have traditionally been based on an empirical keying approach. Although this approach yields scales which maximize prediction, the resulting scales display limited construct and content validity (Hunter & Hunter, 1984; Mumford, Uhlman, & Kilcullen, in press). The results obtained in the present study, however, demonstrate the possibility of employing well-defined constructs and psychological judgment in generating background data items capable of tapping a construct domain. When these items are used to formulate rational scales, our findings indicate that the resulting measures evidence substantial construct validity while yielding effective prediction consistent with the nature of the performance at hand. Thus, this study provides some important evidence pointing to the utility of construct-oriented rational scaling procedures in the development of background data measures.

A second, somewhat broader, implication of our findings concerns the nature of the constructs that can be measured using substantively-oriented item generation and scaling techniques. Prior research examining the utility of rational scaling procedures has typically focused on well-defined, rather concrete, behavioral domains, such as past job performance (Hough, 1984; Pannone, 1984), leadership (Russell & Kuhnert, in press; Schoenfeldt, 1989), or risk-taking (Himmelstein & Blaskovicks, 1960). In the present study, however, we have shown that substantive item generation and scaling procedures can be used to formulate meaningful measures of far more complex constructs, including narcissism, myth viability, and object beliefs, among other variables. This finding is noteworthy, in part because it

suggests that background data measures can be used to assess a wider range of characteristics than has hithertofore been the case, and in part because it suggests that this substantive construct-oriented strategy might be used to measure the kind of characteristics that influence complex acts, such as security breaches.

These psychometric considerations are of substantial importance. The results obtained in the present investigation, however, also have some important implications for understanding the nature of security breaches and, more broadly, the propensity for other related forms of destructive acts, such as sabotage, selling information, taking bribes, or damaging group performance for personal gain. In the ensuing discussion, we will attempt to address some of these issues.

Certainly, greed, dishonesty, and a lack of commitment to others are not the only forms of destructive behavior that might be observed, even in adolescent samples. Nonetheless, these behaviors represent distinct aspects of destructiveness. Across these three distinct kinds of destructive acts, measures of the belief, motivational, and self-system constructs were found to yield effective prediction. Thus, there is reason to suspect that the belief, motivational, and self-system constructs under consideration might prove useful in accounting for a variety of destructive acts.

Some support for this proposition may be obtained by considering the procedures used in generating models to account for greed, communality, and dishonesty. Initially, we developed a general structural model intended to account for relationships among the belief, motivational, and self-system constructs. This general structure was then used to account for each destructive behavior, in turn, by allowing the beliefs, motivational, and self-system constructs to influence a particular criterion variable. This general structural model could be applied in describing all three forms of destructive behavior.

Certainly, research is needed to examine the ability of this model to predict other forms of destructive acts, especially the kinds of destructive acts likely to be observed in organizational settings. This model, for instance, should be applied in attempts to predict security breaches or, more appropriately, high-base-rate forms of destructive behavior, such as ethics breaches or white-collar crime.

In this regard, however, it should be recognized that the results obtained in an initial field study, using a select subset of scales derived from this model and items applicable in adult samples, indicate that these constructs may, indeed, prove useful in predicting "real-world" performance. Thus, there is some reason to suspect that this general structural model may prove useful in addressing multiple forms of destructive acts likely to occur in organizational settings.

Further research along these lines is likely to prove of substantial value for three reasons. First, it permits the development of predictive systems that will address multiple forms of destructive behavior, thereby enhancing the efficiency of predictive systems. Second, if a general model of this sort proves useful in predicting multiple forms of high-base-rate destructive behaviors in organizational settings, it might plausibly be extended to low-base-rate behaviors, such as security breaches, through alternative validation strategies, such as historic studies (Simonton, 1990). Third, the constructs embedded in this model might provide a common structural framework for appraising individuals with different kinds of life experiences using a number of alternative measurement formats ranging from standardized tests to interviews. Application of objective items, life history interviews, and clinical interviews targeted on these constructs in a tailored sequence should, with further research, permit development of more accurate appraisal systems that can be justified based on theory as well as rote empirical observation.

Because these constructs have a basis in theory, and this underlying theory provides a stronger basis for justifying personnel decisions, the nature of this causal system is of interest with respect to its implications for the kind of constructs that should be examined in further attempts to understand and predict destructive behaviors, such as security breaches. Beliefs shape action preferences in ill-defined situations (Wright & Mischel, 1988; Mumford, Reiter-Palmon, & Redmond, in press). Thus, it is not surprising that beliefs contributing to negative interactional patterns, such as object beliefs and beliefs about humanity, contributed to destructive acts by facilitating use of destructive paths to goal attainment. However, in accordance with our earlier observations concerning the intentional, goal-oriented nature of these acts, beliefs leading to uncertainty about goal attainment or a lack of desirable goals also contributed

to destructive acts. The importance of these goal beliefs lay not only in their direct effects on destructive acts but also their indirect effect arising from their impact on the emergence of more strategic belief structures, such as object beliefs.

The central role these beliefs apparently play in influencing destructive acts, and mediating the impact of motives and self-system constructs on these acts, is of interest for four reasons. First, assessment systems should consider both beliefs about the nature of goals and beliefs about desirable strategies for attaining goals. Second, attempts to assess motivational and self-system influences that fail to take these beliefs into account may yield grossly misleading conclusions. This point is nicely illustrated by fear or anxiety. Fear did not exert direct effects on destructive acts, but exerted a strong indirect effect vis-à-vis its influence on outcome beliefs and outcome uncertainty. Third, the presence of these beliefs when the motive and self-system substrate giving rise to stable belief structures is not present may have rather different implications (e.g., situational determination, as in the case of spies), as opposed to conditions where these beliefs appear along with pertinent motives and self-system constructs (e.g., individuals likely to be destructive in many situations, as in the case of certain notorious leaders). Fourth, the dependence of these beliefs as enduring entities on motives and self-system constructs suggests that assessment systems should consider all three kinds of constructs.

Motives, of course, contribute to goal preferences (Winter, 1973, 1987b). Accordingly, motives that lead people to place their own concerns over the well-being of others, such as narcissism, self-aggrandizement, power motives, and perhaps aggression, tended to exert direct effects on destructive acts. This observation suggests that effective systems for predicting destructive acts, such as security breaches, should include measures of motives that lead individuals to focus on their own concerns regardless of others' needs. Our understanding of ourselves influences our understanding of the world (Cantor & Kihlstrom, 1987). Thus, it is not surprising that self-system constructs contributed to negative beliefs while exerting direct effects on destructive acts. Broadly speaking, the relevant self-system constructs seemed to act as inhibitors (e.g., self-esteem and self-regulation) or promoters (e.g., myth viability and

social alienation) of destructive acts. Thus, assessment systems might wish to consider aspects of the self-system, such as morality, conscientiousness, self-regulation, and self-esteem, that make destructive paths to goal attainment unacceptable to the individual while examining aspects of the self-system that might legitimatize these acts, such as social alienation, poor or unintegrated life themes, and negative appraisal of potential future selves (Bandura, 1989; Mumford, Gessner, O'Connor, Connelly, & Clifton, in review; Oyserman & Markus, 1990a, 1990b).

These general effects were obtained in all three models where the belief, motivational, and self-system constructs were used to account for different kinds of destructive behavior. However, the specific beliefs, motivations, and self-system constructs that contributed to a particular kind of destructive behavior differed. Self-aggrandizement, for instance, exerted direct effects on greed, but not dishonesty. Thus, different kinds of destructive acts may be influenced by different beliefs, motivational, and self-system constructs. When it is recognized that different situations involving different goal and different paths to goal attainment are associated with different kinds of destructive acts, this specificity is not surprisi g. This observation, in turn, suggests that certain kinds of constructs may prove particularly useful in predicting certain kinds of destructive acts. In this regard, however, it is important to recognize the fact that all these constructs operate as part of an integrated syndrome such that they typically exert indirect effects, even when significant direct effects are not obtained. Thus, a more comprehensive assessment system will still contribute to overall prediction, even when the focus is on a specific kind of destructive act.

Furthermore, two constructs exerted direct effects on all three kinds of destructive acts: object beliefs and myth viability. Fromm (1973) argued that the belief that other people can be used as tools or objects contributes to destructiveness through a variety of mechanisms. This belief structure allows individuals to devalue or dehumanize others, and Stanford and Comstock (1971); Diener, Dineen, Endersen, Beaman, and Fraser (1975); and Staub (1989a, 1989b), among others, have argued that this devaluation contributes to destructive acts. Object beliefs, however, may also provide a convenient basis

for justifying these acts while simultaneously encouraging the individual to choose destructive paths to goal attainment and construct situations in a destructive fashion. Thus, it is not surprising that object beliefs exerted a strong general effect on the propensity for destructive acts.

The myth viability construct is concerned with whether the stories or life themes people use to direct and organize their behavior reflect images involving contributions to the well-being of others (Ochberg, 1988; Sarbin, 1986). Images which reflect a lack of social concern may lead individuals to pursue destructive goals and enter situations where others may be harmed because they are consistent with their expectations. These expectations, by virtue of their generality, will, in turn, lead to broad cross-situational prediction of destructive acts. Adler (1928) and Howard (1991) have reached similar conclusions, and these observations suggest that myth viability, like object beliefs, should be considered in virtually any attempt to predict destructive acts.

When individuals displaying object beliefs and poor life stories, along with the pattern of motives leading to a preference for personal gain, are placed in situations where goal attainment can be brought by harming others, they are likely to act in a destructive manner. This propensity is especially likely to manifest itself when the situation provides opportunity and activates other relevant beliefs, motives, or self-concepts through threat or competitive pressure. This propensity will be particularly likely to manifest itself if sufficient internal or external controls on behavior are not present.

Our foregoing observations, of course, imply that differential characteristics, such as object beliefs and myth viability, interact with situational variables in determining the occurrence of destructive acts, such as security breaches, sabotage, taking bribes, or exploiting one's position to the detriment of a group. Blass (1991) and Staub (1989a), among others, have stressed the need for an interactional approach in our attempts to understand human destructiveness. By delineating the differential characteristics associated with different kinds of destructive acts, we hope that the present study will provide a background for further research intended to show how our understanding of human differences

and situational influences can be used to control destructive acts, such as security breaches and bribe taking, that undermine the organizations that are crucial to our daily life.

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